

TVC Series - High Frequency Thermal Voltage Converters

Custom solutions are available

HOW TO ORDER

TVC1 R-100 G X M

Packaging

TCR (ppm/°C)

X = ±25

Resistance Tolerance

G = ±2%

Resistance

50Ω = 500 1,000Ω = 102

100Ω = 101 2,000Ω = 202

Input Connector Type

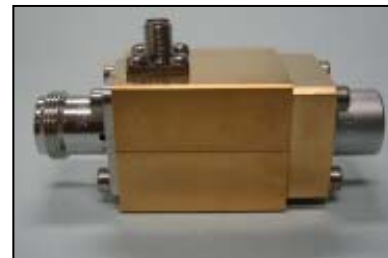
R = Receptacle Connector

P = Plug Connector

High Frequency Thermal Voltage Converter

TVC1 = Mounted SMA Connector

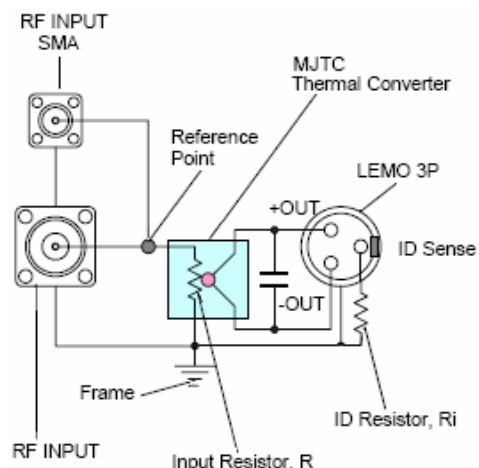
TVC2 = No SMA Connector



FEATURES

- Complete thermal converter module using the MJTC thermal converter as a core device.
- Dedicated high-frequency chassis with input and output connectors.
- Employs the virtual-TEE configuration ("internal" or "built-in") TEE
- Evaluation of frequency characteristic of the ac-dc transfer difference possible at 10-6 level up to 1MHz.

INTERNAL SCHEMATIC



Values of Ri (the ID Resistor)

Input Resistance, R	ID Sense Resistors, Ri
50 Ω	50 – (56) – 82Ω
100 Ω	100 – (120) – 180Ω
200 Ω	200 – (220) – 470Ω
500 Ω	500 – (560) – 820Ω
1K Ω	1.0K – (1.2K) – 1.8KΩ
2K Ω	2.0K – (2.2K) – 4.7KΩ

Note: The values in () are nominal values.

Note: Output Capacitance. The shunting capacitance between the output pins is 10nF.

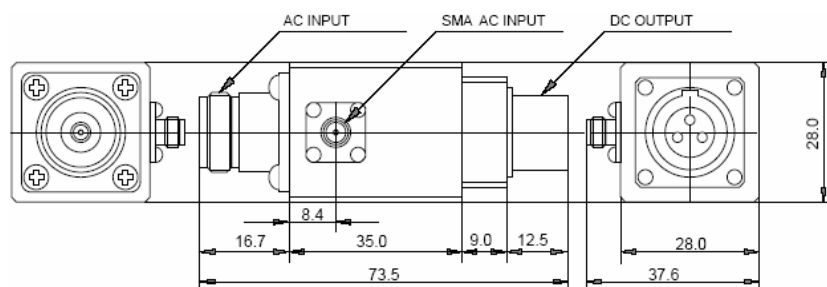
APPLICATIONS

- For high-precision AC-DC transfer standards.

SPECIFICATIONS & PERFORMANCE

Characteristic		TVC1	TVC2
Input	Rated Power	0.1W	
	Max Applied Power	0.5W	
	Resistance (Ω)	50, 100, 200, 500, 1K, or 2K	
	TCR (ppm/°C)	±25	
	Tolerance	±2%	
	Frequency Range	DC-10MHz	
	Connector Type	Receptacle or Plug	
Output	Rating output voltage	More than 60mV	
	Output Resistance	340 Ohms ±30%	
	TC of Output Resistance	±300ppm/K	
Input/Output	Sensitivity	More than 0.6 V/W	
	TC of Sensitivity	-0.001mV/mW/K (typical)	
	Response Time	2.5 ± 0.6 sec (63% response)	
	AC-DC Difference, 10k-100kHz	< 10ppm (typical)	
	AC-DC Difference, 100K-1MHz	< 10ppm (typical)	
Operating Temperature	25°C ± 5°C		
Storage Temperature	-20°C ~ +60°C		

DIMENSIONS (mm)



TVC COMPONENTS

Item	Model
Thermal Converter	AAC MJTC
RF Input SMA	Hirose HRM-301B
RF Input R / P	Shuner 23N_50-0-23/133NE
DC Output	Lemo 3pin EHV2B303CLL
AC Input Receptacle	Shuner 23N_50-0-23/133NE
AC Input Plug	Shuner 13N_50-0-33/133NE

Dimensions of TVC1 and TVC2 are the same, except the SMA connector is not mounted in the TVC2.